

ABSTRACT OF THE DISCLOSURE

A plurality of modulators 110 respectively modulate inputted baseband signals into IF signals having different frequencies. A multiplexer 120 multiplexes the plurality of IF signals obtained by the modulation. An electrical-optical converter 130 converts the multiplexed IF signals into optical signals through intensity modulation. A local oscillation signal source 140 outputs a predetermined local oscillation signal. An external modulator 150 intensity-modulates the optical signal using the local oscillation signal. An optical branching portion 160 branches the intensity-modulated optical signal and respectively outputs optical signals obtained by the branching to radio base stations. An optical-electrical converter 21k converts the inputted optical signal into an electric signal, to obtain an RF signal obtained by frequency-converting the IF signal. Only a component having a desired radio frequency extracted in a band filter 22k from the RF signal is transmitted to a subscriber terminal from an antenna 23k.

Frequency conversion from the IF signal to the RF signal is thus optically performed, thereby making it possible to share the frequency converter or the electrical-optical converter among the plurality of radio base stations.